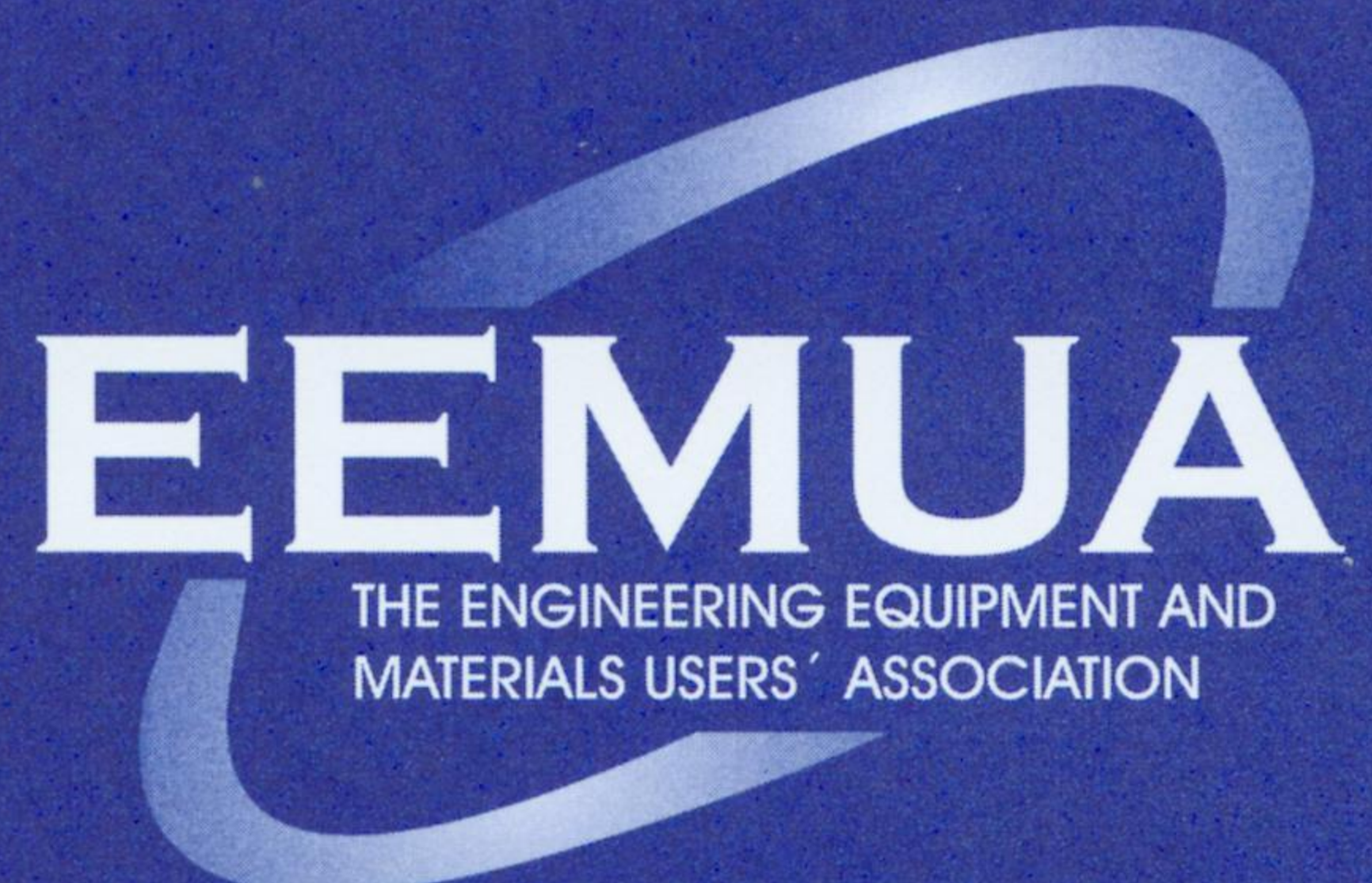


THE ENGINEERING EQUIPMENT AND MATERIALS USERS' ASSOCIATION

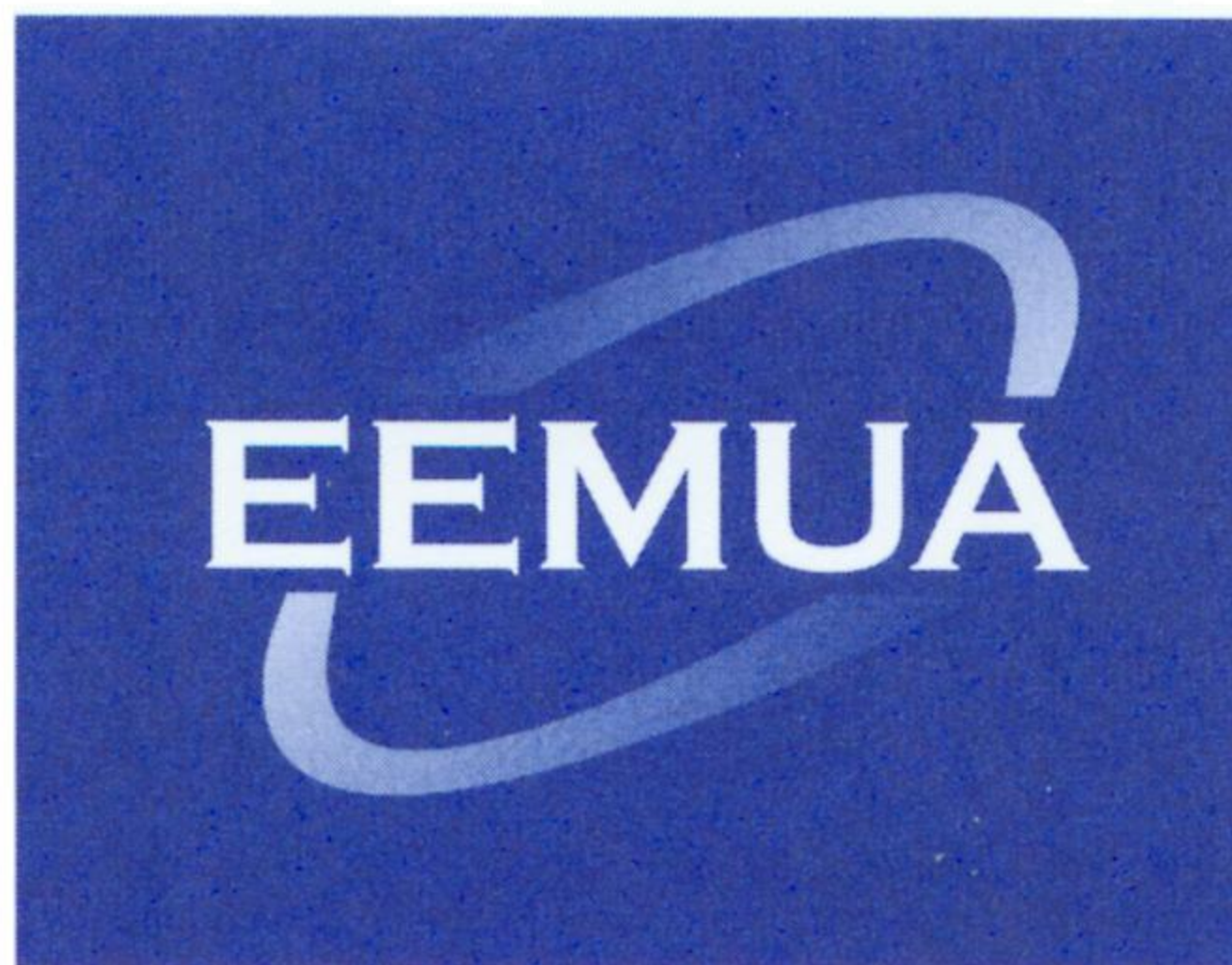
Risk Based Inspection

A Guide to Effective Use of the RBI Process

PUBLICATION No 206 : 2006



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THE ENGINEERING EQUIPMENT AND MATERIALS USERS' ASSOCIATION

The Engineering Equipment and Materials Users' Association (EEMUA) was formed in London in 1983 by the amalgamation of the Engineering Equipment Users' Association (EEUA) with the Oil Companies' Materials Association (OCMA).

Members are drawn mainly from process plant operating companies in the oil and gas sector, chemical and allied industries, and from the energy and power generating sector, plus companies that specialise in providing engineering services to support such organisations. Membership is open to companies of all sizes that share the common interest of **users** of engineering equipment and materials and that meet the admission criteria.

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- To encourage and facilitate the development and application of common user best practices, standards and specifications.
- To keep members informed of forthcoming changes to legislation, regulation and standards likely to impact their businesses.
- To provide a route through which Member companies can participate in the work of national and international Standards organisations.
- To represent the users' view on engineering issues to legislative, regulatory and other bodies, to suppliers and the rest of industry.

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Comments will be considered by the relevant EEMUA Technical Committee and may be incorporated in future editions of the publication. New editions will be publicised on the EEMUA website.

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Foreword

The British Health and Safety Executive (HSE) is interested in the application of the risk-based inspection (RBI) process across industry. The EEMUA Committee of User Inspectorates (CUI) believes that, whilst the RBI process is seen as an important methodology for identifying and targeting inspection programmes, further guidance on good practice and its application is warranted. The EEMUA CUI therefore set up a Working Group with the objective of producing this document to give general guidance for those interested in applying or developing an RBI approach to inspection. This guidance has been produced predominantly for application on pressure systems and equipment, but it is considered that the guidance is also of use to all those involved in risk-based inspection of other mechanical plant.

The basic premise is that the integrity of industrial plant, or other such asset, can be determined and monitored consistently by using risk-based methodologies.

This EEMUA document has been developed to assist in the interpretation and use of the HSE Report CRR 363/2001 'Best Practice for Risk Based Inspection as a Part of Plant Integrity Management'.

This HSE document incorporates as Appendix B an audit tool that allows users to assess their own RBI system. This is also the tool the HSE will use to assess Users' RBI systems in the workplace.

Mechanical integrity is maintained by operating industrial plant within defined limits and executing process monitoring, fabric maintenance and inspections with suitable techniques, location and frequency. The inspection techniques can be either non-invasive or invasive and may be applied when the plant is in-service or out of service.

The inspection intervals derived from the RBI procedure may be longer or shorter than the calendar-based inspection interval previously prescribed by legislation. In such cases, the results of the RBI study will need to be supported by a comprehensive audit trail to enable a third party to assess the engineering judgement that supports the proposed inspection plan.

There is not an intention here to comment on, or place support with, any of the methods of RBI currently being used within industry. Both qualitative and semi-quantitative assessment are of value when used correctly.

However, in either case:

- The selected process needs to be consistent in its application.
- The selected processes should be transparent and auditable.
- The team competency and the RBI assessment process has to lend itself to the identification of all potential and active degradation mechanisms applicable to each item of plant.
- The resulting inspection plan and interval needs to be such that the residual risk for each of the identified damage mechanisms is within defined acceptable limits.